UNITED STATES PATENT AND TRADEMARK OFFICE

Application of: BAREA, Tiziano

Confirmation No.: 9279

Serial No.: 10/597,318

Examiner: M. P. Stafira

Filed: July 20, 2006

Group Art Unit: 2886

For: DEVICE FOR THE OPTICAL ANALYSIS, INCLUDING TWO-DIMENSIONAL, OF A THREAD OR YARN

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

September 9, 2009

RESPONSE TO FEBRUARY 9, 2009 OFFICE ACTION

This Amendment is submitted in response to the Office Action issued February 9, 2009.

Claims 1-10 are pending in this application and applicant has not amended any claims.

Rejection Under 35 U.S.C. §103

The Examiner rejected claims 1-10 under 35 U.S.C. §103(a) as obvious by Ohsawa et al., U.S. Patent No. 4,341,958 ("Ohsawa") in view of Allen et al., U.S. Patent No. 4,739,176 ("Allen").

The Examiner stated that Ohsawa substantially teaches the claimed invention except that it does not show that the light emitter elements are at least two in number and are oriented such that the thread is always struck by the light emitted by at least one of them. To cure this deficiency in the disclosure of Ohsawa, the Examiner cited Allen and asserted that Allen shows that it is known to provide at least two emitter elements so that a light emitter always strikes the thread for an optical thread sensor. The Examiner concludes that it would have been obvious to one skilled in

the art to combine the device of Ohsawa with the optical emitters of Allen for the purpose of providing uniform illumination of the thread, therefore reducing errors in the optical measurement.

In response, applicant respectfully traverses the Examiner's ground of rejection.

Applicant's invention provides for at least two light emitter elements which are oriented such that the thread is always struck by the light emitted by at least one of them and a light transparent means of the claimed device which are transparent to the infrared light so that they do not diffuse the light generated by the transmitter means. In contrast, Allen discloses at column 4, lines 32-37, that the material of insert 44 is selected to provide a background in any given direction by providing for the reflectivity of the background to be similar to the yarn. Accordingly, the material of insert 44 reflects the light generated by the lamps. Accordingly, neither Ohsawa nor Allen, alone or in combination, disclose the claimed invention.

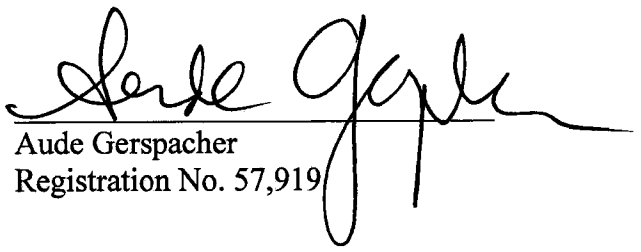
In addition, this feature of the present invention provides surprising advantages over the prior art and allows a superior detection of yarn defects and yarn movements. The transparent ceramic used in the present invention provides no birefringence and allows the yarn to be maintained in contact with the transparent ceramic means even if the yarn moves at a very high speed, e.g. 3000 m/min during a 24-hour period and even if the yarn is very abrasive. The use of transparent ceramic allows a good control of the yarn and a low friction between ceramic and thread during yarn feeding towards the textile machine. The low friction does not negatively effect the yarn tension at very high feeding speeds and avoids the risk of yarn damage. The transparent ceramic allows different kind of sensors to be perfectly used in any kind of textile applications. The contact between the yarn and the ceramic transparent means allows the latter to be maintained clean but this contact does not wear said means due to the use of the ceramic material whose hardness feature is very high. These advantages cannot be obtained by combining the cited prior art.

Applicant further maintain that one skilled in the art would not combined the two cited references. Allen's invention is related to the detection of contaminants in highly elongate textile product such as yarn. In particular, it is concerned with detection and removal of vegetable matter from wool yarn. In column 1, lines 33-43, this prior art reference refers to patents relating to the monitoring of changes in yarn diameter. Allen states that the approaches of Ohsawa have no useful application to the detection of contaminants (See lines 37-43) Hence, the skilled person would not have combined Ohsawa and Allen since the Ohsawa relates to a solution which, as described in Allen has no useful application to solve the problem which Allen sets out to solve. Applicant further maintains that if a device was made from combining the two references, the device could not monitor the changes in the yarn diameter. Accordingly, one skilled in the art would not have combined these disclosures, and could not have done so, to arrive at applicant's claimed invention.

For the reasons discussed above, applicants respectfully request that the Examiner reconsider and withdrawn this ground of rejection.

Reconsideration and allowance of all the claims herein are respectfully requested.

Respectfully submitted,



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